



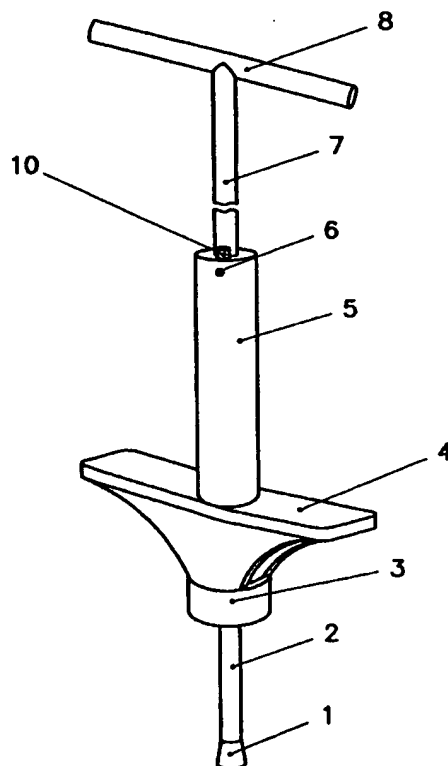
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (51) International Patent Classification <sup>6</sup> :<br><b>A63B 25/08</b>  | <b>A1</b>   | (11) International Publication Number: <b>WO 99/61111</b><br>(43) International Publication Date: 2 December 1999 (02.12.99) |
| (21) International Application Number: PCT/KR99/00258<br>(22) International Filing Date: 21 May 1999 (21.05.99)<br>(30) Priority Data:<br>1998/9479 U 26 May 1998 (26.05.98) KR<br>(71)(72) Applicant and Inventor: OH, Ju-Whan [KR/KR]; 2-202,<br>Hanyang-Woonnam Apt., Hyoja-dong Wansan-ku, Jeonju<br>City 560-241 (KR). | (81) Designated States: BR, CN, IN, JP, RU, US, European patent<br>(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,<br>LU, MC, NL, PT, SE).<br>Published<br>With international search report. |  |

(54) Title: AIR-POGO STICK

## (57) Abstract

Unlike previous devices worked by iron springs, this invention called "Air-Pogo stick" is worked by an air cylinder. While previous devices whose elasticity is fixed are unable to be adjusted to excesses of elasticity, this invention can be adjusted to them. On the whole this invention is made up of two main parts: a handle grip which a user holds when he jumps on the foot-boards (4), and an air cylinder to which foot-boards (4) are attached in a body. In particular the air cylinder (5) has a valve (10) through which a user can regulate air. This invention is simultaneously worked by both air pressure power and vacuum power created in the upper and lower part of the piston (9) in the cylinder (5) respectively, when exerted by an outside force. And both the powers can create a soft and strong jumping power, which gives the user pleasure as well as high kinetic effect.



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## Air-Pogo stick

5

### Technical Field and Background Art

This invention is a kinetic instrument that bounds immediately softly and  
10 strongly when a user jumps on the foot-boards of the invention.

So far, there have been several similar kinetic devices at home and abroad  
such as Korean Utility Model Patent No. 1294, Korean Utility Model Patent No.  
71-1690, and Japanese Utility Model Patent No. SHOWA (1960) 35-1719, etc.

15

But unlike this invention worked by air pressure, previous devices are worked  
by iron springs and cannot be used by overweight people because the elasticity  
is invariably fixed. And also the elasticity of the previous devices is weakened  
as we use them for a long time. It is indicated that a user cannot enjoy the  
20 pleasure of dynamical exercise with the previous devices of which the elasticity  
is invariably fixed.

To solve these problems, another jumping invention that I registered before,  
Patent No. 079202 of Korea, was worked simultaneously by both air pressure  
25 power and vacuum power, both of which are created by two check valves  
attached to the cylinder and piston respectively. But in this case there was a  
problem of having to make the cylinder tube large enough to gain a satisfactory  
elasticity.

30 This invention has been made to solve those above-mentioned problems  
technically. This invention can basically obtain the elastic recoverability by air  
pressure and the stronger elasticity by injecting as much outer air as is  
necessary into the cylinder tube.

## 5 Disclosure of Invention

It is possible for this invention to be produced in two types, one for portable (A) and the other for immovable (B).

10 For the type (A) for portable, FIG 1-3,  
first, make the Piston (9) with Piston Rod (2) move upward and downward in  
Cylinder Tube (5), and with Rod Cover (3) seal up the bottom of the Cylinder  
Tube (5). Join the Handle Bar (7) with Handle Grip (8) to the Fixing Pin (6)  
attached to the upper part of Cylinder Tube (5). Foot-Boards (4) are placed in  
15 the lower part of the outside of Cylinder Tube (5), and Air-Control Valve (10)  
is also placed in the upper part of the Cylinder Tube (5).

For the type (B) for immovable, FIG 4,  
first, make the Piston (9) with Piston Rod (2) move upward and downward in  
20 Cylinder Tube (5), and with Rod Cover (3) seal up the bottom of the Cylinder  
Tube (5). With Cylinder Tube (5) and a Foot-Board (4) fabricated in a body,  
type (B) must be able to move vertically with Handle Bar (7) in the center,  
Piston Rod (2) and Handle Bar (7) being fixed to a fixing board. And  
Air-Control Valve (10) is placed in the upper part of the Cylinder Tube (5).

25

Specific working descriptions of the invention, type (A) and (B), are as follows.

As Piston Rod (2) of the type (A) and (B) touches the ground and a fixing  
30 board respectively, this invention is first started with the underside of the Piston  
(9) in Cylinder Tube (5) contacting Rod Cover (3). Under these working  
conditions, when outer air is injected into the upper part of Cylinder Tube (5)  
through the Air-Control Valve (10) with a pressurizer, strong air pressure power  
is created in Air Pressure Space (13).

5     When a user jumps on the Foot-Boards (4) holding the Handle Grip (8),  
Cylinder Tube (5) comes down with Piston Rod (2) touching the ground. As a  
result, since Air Pressure Space (13) reduces, the air pressure power becomes  
stronger. On the other hand, as Vacuum Space (14) between Piston (9) and Rod  
Cover (3) is increased by an expansion of the Vacuum Space (14), which is  
10 brought about by a physical external force, the vacuum power also becomes as  
much stronger.

Since both the air pressure power on the Piston (9) and the vacuum power  
under the Piston (9) become stronger simultaneously, a user can get very strong  
15 elasticity of the instrument. Though the vacuum power is decided by the size of  
Vacuum Space (14), a user can get much stronger elasticity by injecting up to  
 $10\text{kgf/cm}^2$  of outer air into Air Pressure Space (13) through Air-Control Valve  
(10) with a pressurizer.

20     The advantages of this invention are as follows.

This invention is lighter in weight than the previous ones worked by iron  
springs. This invention overcomes the elasticity limit by regulating the air  
pressure as a user wants. This invention doesn't make such noise brought about  
25 by distention and laxity of iron springs.

In particular, Cylinder Tube (5) and Foot-Boards (4), major parts of this  
invention, are produced in a plastic projection in a body, and it is possible to  
produce them in a great quantity at a low cost. It is considered that this  
invention would help to improve the health of the general public.

## 5 Brief Description of Drawings

FIG 1 : The drawing of the invention looked askance

FIG 2 : The cross-section of the invention

FIG 3 : The side view of the invention

10 FIG 4 : The cross-section of another mode of the invention

## Names for the Major Parts in the Drawings

15

1. Shock-Absorbing Rubber

2. Piston Rod

3. Rod Cover

4. Foot-Boards

20 5. Cylinder Tube

6. Fixing Pin

7. Handle Bar

8. Handle Grip

9. Piston

25 10. Air-Control Valve

11. Piston Packing

12. Rod Packing

13. Air Pressure Space

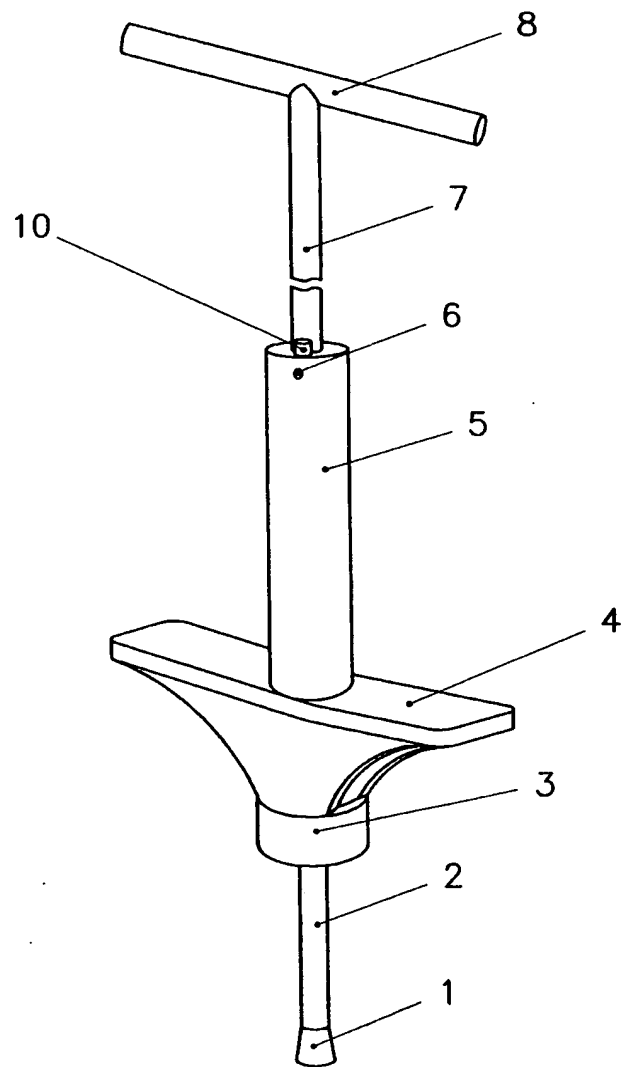
14. Vacuum Space

5 **What is claimed is :**

1. Piston (9) united with Piston Rod (2) is able to move vertically in Cylinder  
Tube (5) of which the ceiling part is closed up, with the bottom part of the  
10 cylinder being sealed up by Rod Cover (3). On the ceiling part of the cylinder is  
set up Air-Control Valve (10) through which a user can regulate as much air as  
is necessary. When a user jumps on the Foot-Boards (4), both air pressure  
power and vacuum power are able to be created at the same time in the upper  
and lower part of the Piston (9) in the cylinder respectively. What is claimed  
15 here is the Air-Pogo stick worked by air on the technical basis of the  
above-mentioned characteristics.

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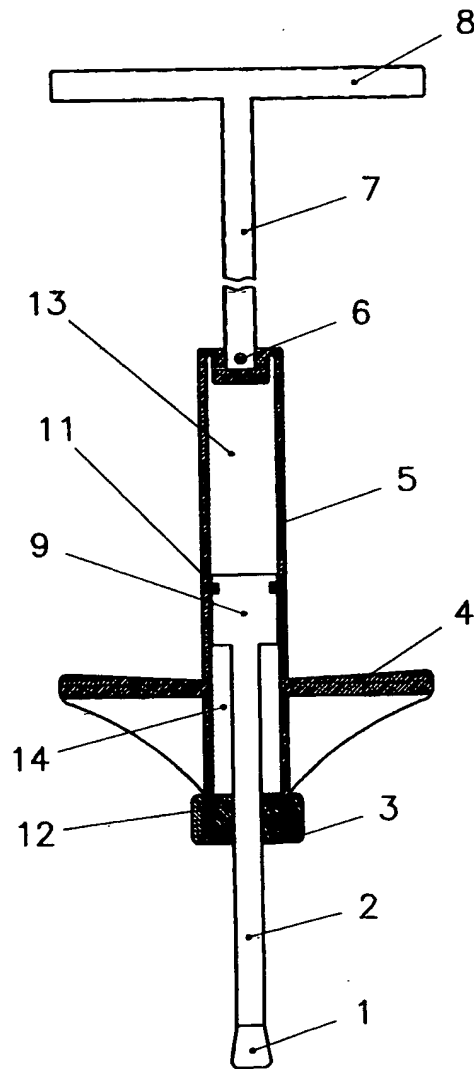
FIG-1





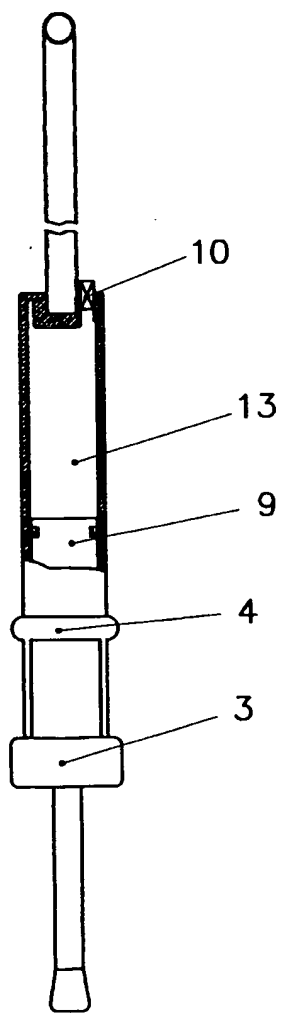
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FIG-2



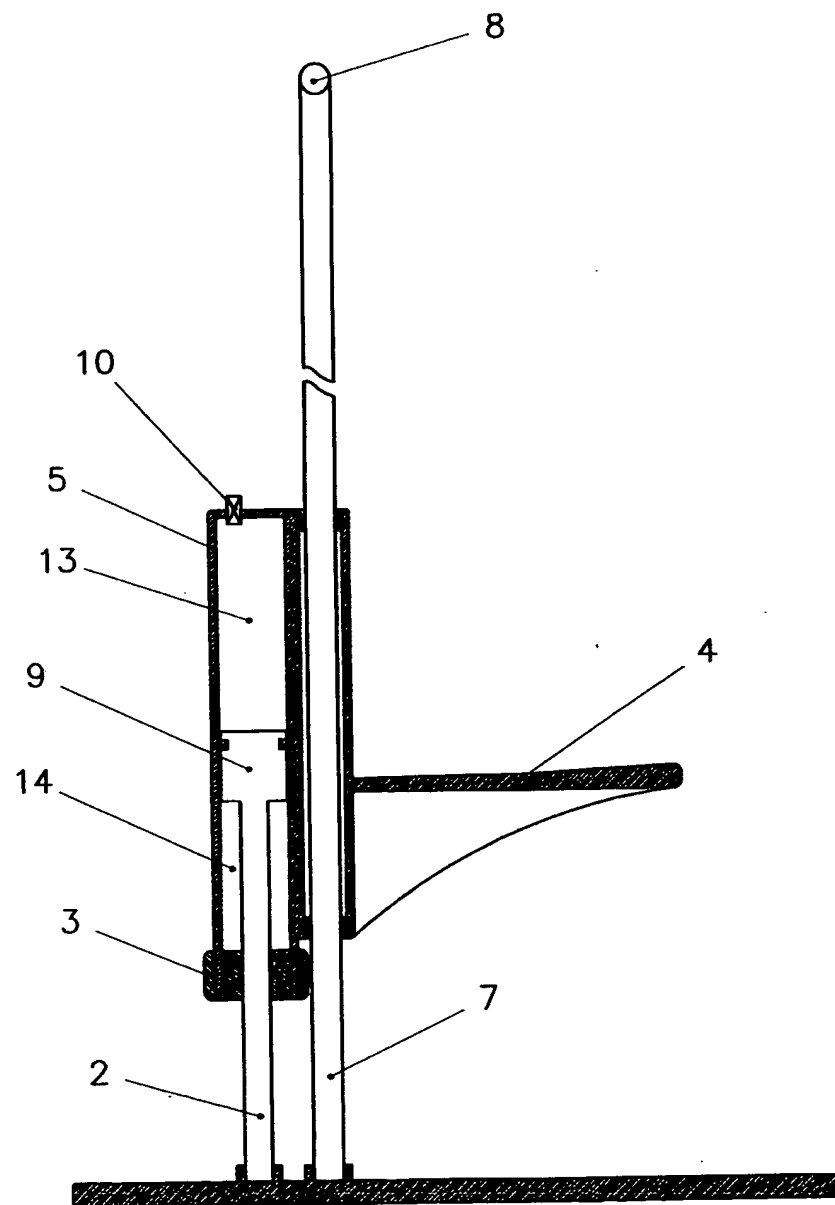
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FIG-3



4/4

FIG-4



# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 99/00258

| A. CLASSIFICATION OF SUBJECT MATTER  |  |  |
|--|--|--|
| IPC <sup>6</sup> : A 63 B 25/08  |  |  |
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| Category*  | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.  |
| X  | SOVIET INVENTIONS ILLUSTRATED, Sections P,Q, week 8610, London: Derwent Publications Ltd., P36, 86-067692/10, SU 1174 047 A (BAKUTIN A N), 16 April 1986 (16.04.86). | 1  |
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| X  | US 5 087 037 A (MORROW), 11 February 1992 (11.02.92), abstract; fig.6,1; column 7, paragraph 2 (lines 15-20).  | 1  |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.  |  |  |
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International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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| X         | US 4 632 371 A (WIRGES), 30 December 1986 (30.12.86), abstract; fig.1,4; claims 1,9,11; column 6, lines 12-17. | 1                     |

# INTERNATIONALER RECHERCHENBERICHT

Information on patent family members

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